



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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PROGRAM

Brian Gustafson, Administrator
Air Quality Program
Department of Environmental & Natural Resources
Joe Foss Bldg., 523 E. Capitol
Pierre, South Dakota 57501

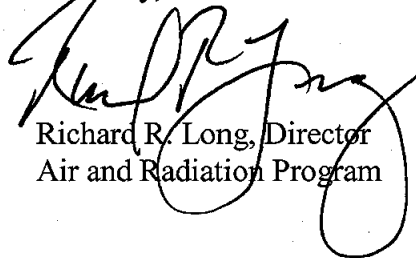
RE: EPA Region 8 Comments on the Draft PSD Permit for
Otter Tail Power Company, 600 MW PC fired Power Plant
(Big Stone II), Big Stone City, SD

Dear Mr. Gustafson:

On April 18, 2006, EPA received a draft permit prepared by South Dakota Department of Environment & Natural Resources (DENR) on Otter Tail Power Company's permit application to construct a 600 MW Pulverized Coal (PC) fired Power Plant (Big Stone II) and to modify the existing 450 MW cyclone-fired Power plant (Big Stone I) in Big Stone City, Grant County, South Dakota. The draft permit establishes permit conditions for both Big Stone I and II. The purpose of this letter is to provide comments on the draft permit during the public comment period. EPA asked for and received additional time to review and comment on this permit. You granted us that request. Our comment period expires on June 26, 2006.

Please find our comments in the enclosure and thank you for the opportunity to comment. If you have any questions, do not hesitate to contact Christopher Ajayi of my staff at ajayi.christopher@epa.gov or at (303) 312-6320.

Sincerely,



Richard R. Long, Director
Air and Radiation Program

Enclosure
cc: Kyrik Rombough (DENR)



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Enclosure

EPA Region 8 Comments on Draft PSD Permit: Otter Tail Power Company's Permit Application for Construction of new 600 MW PC fired Power Plant and Modification of the existing 450 MW Cyclone-fired Power Plant in Big Stone City, South Dakota.

Date: June 26, 2006

Legal authority options to issue the plant wide caps for SO₂ and NO_x

We attempted to contact the State's legal counsel to discuss this issue and did not reach her. We would like to discuss this issue further with the State.

The State's draft PSD permit for Big Stone II proposes plant wide sulfur dioxide and nitrogen dioxide emission caps. The State elected not to apply the PSD Plant wide Applicability Limitation (PAL) rules, which we delegated to the State. The State relies on the plant wide caps and indicates that the Big Stone II project is not required to conduct a PSD review for sulfur dioxide or nitrogen oxide because its net emission increases under the cap would be less than the significance rate. In our discussion with the State on June 19, 2006, we explained that the authority in the PSD rules to create synthetic minor PSD permit conditions for the proposed action lies in the PAL rules. From our conversation it appears that you believe the PSD rules give you the authority to issue PSD permits with synthetic minor PSD permit conditions. We disagree. Consistent with *Alabama Power Co. v. Costle*, 636 F.2d 323 (DC Cir. 1980), and *New York v. EPA*, 413 F.3d 3 (DC Cir 2005), EPA has carefully crafted netting regulations, including the PAL provisions, that create enforceable mechanisms for determining when new construction results in a significant net emissions increase. As the *New York* opinion affirmed, EPA has discretion to define what constitutes an emission increase. The contemplated cap does not conform to EPA's netting and PAL provisions. The reliance on the "potential to emit" definition in 40 C.F.R. 52.21(b)(4) is circular because, in order to say that the limit in the cap is effective, one must assume it is effective. By failing to comply with the mechanisms under 40 C.F.R. 52.21 for creating effective netting and caps, South Dakota must look to other regulatory means for creating a cap, such as the ones we suggested on our call. Thus, it is telling that unlike other states in the Region, South Dakota's synthetic minor source construction SIP provisions cover only sources with the potential to emit less than 100 tons per year - - and therefore, those SIP provisions can not be used for most PSD synthetic minor sources.

As we outlined to you on the June 19, 2006 conference call, in addition to the PSD PAL rules, there are other legal authorities the State could rely on to create the proposed plant wide caps: (1) develop a source-specific SIP revision for this source; (2) amend the State SIP, expanding the minor source construction permit program to cover sources requesting synthetic minor emission limits to avoid the PSD program; or (3) amend the Big Stone's Part 70 permit using the title V significant permit modification rules and create a synthetic minor limit for the proposed new unit.

Permit Condition 5.6; PSD Exemption – Plant wide Sulfur Dioxide (SO₂) limit

The Statement of Basis (SOB) on pp. 11, last paragraph states that *“Sulfur dioxide (SO₂) emissions from the Big Stone I will be controlled by the wet scrubber that is being installed to control SO₂ emissions from the Big Stone II facility. Otter Tail Power Company has indicated, however, that they would like the ability to operate Big Stone I during periods when the wet scrubber is down for repairs or preventive maintenance.”*

Otter Tail Power Company's (OTPC) commitment to reduce future emissions from both Big Stone I and II such that increases above the current actual emissions are below the significance level (below 40 tpy) is the basis for netting out of PSD review for SO₂. However, neither the SOB nor *permit condition 5.6* provide satisfactory explanation of how this will be accomplished. It is important that OTPC propose a specific plan of how it plans to accomplish the emission reductions and for DENR to incorporate major components of such plan into the permit to make a compliance demonstration feasible. For example, the request by OTPC to operate Big Stone I during periods when the wet scrubber is down for repairs or preventive maintenance needs to be discussed further.

Because OTPC is proposing to use the wet scrubber as the control for both Big Stone I and II, and as a result be granted a plant wide cap limit for SO₂ emissions and ultimately net of PSD review, it is difficult to justify such an exemption without further explanation of how this is going to be accomplished. Pollution control equipment used to establish permit limits must be employed at all times especially when the use of such control equipment is the basis of avoiding important review such as PSD. It will be difficult to justify operating Big Stone II when the wet scrubber is down for repairs and/or preventive maintenance. At a minimum, DENR must specify the length of periods for these exemptions, the uncontrolled emissions from Big Stone I during those periods and how these emissions would be monitored and counted towards the “plant wide” cap. The permit should clarify that during the periods when emissions from Big Stone I are *not* routed through the SO₂ scrubber as proposed in condition 5.10, emissions from Big Stone I *must* still be monitored with a SO₂ CEMS and those emissions counted toward the plant wide emissions cap established in condition 5.6. The permit *must* also state explicitly that Big Stone II shall *not* be operated when the wet scrubber is not operating effectively.

Although *permit condition 5.6* specifies a SO₂ limit of 13,278 tons per 12-month rolling period for plant-wide cap, it is important that DENR discuss how the source proposes to arrive at this number in this new scenario. For example, DENR should establish a wet scrubber control efficiency that takes into account the uncontrolled potential and the actual SO₂ emissions from the two major SO₂ emitting units (units 1 and 13). This control efficiency must be specified in the permit condition in order to be enforceable.

Permit condition 5.6, last paragraph states that, *“the sulfur dioxide emissions monitored by the continuous emission monitoring system on Unit #1 and #13 shall be used in the plant wide limit compliance demonstration.”* This language is satisfactory except there is no short limit on SO₂ in the permit. The closest limit is the 1.4 pounds per megawatt-

hour gross energy output or 5 percent of the potential combustion concentration (95% reduction) on a 30-day rolling average in Table 7 on pp.7. DENR should establish a short term limit for SO₂ to provide a reference point for CEMS data that are being collected on an hourly basis and to protect short term National Ambient Air Quality Standards (NAAQS).

Permit Condition 5.8; Plant wide Nitrogen Dioxide limit

Again, there is no short term limit for NO_x for the major emitting Units (Units #1 and #13) even though DENR established short term limits for other units in Table 9, pp 10 of the permit. DENR's states that "*since the continuous emission monitoring system will be able to provide quantifiable data on an hourly, monthly, and yearly basis, a short term or hourly emission limit is not warranted.*" DENR also makes the argument that the NO_x standard is an annual standard and thus does not need a short term limit. Notwithstanding these comments, EPA believes DENR must establish a short term limit for NO_x because it is a precursor for ozone which has a short term, 8-hr standard for protection of NAAQS.

Compliance Monitoring for filterable PM limit /PM10 limit

Condition 4.1, on page 5 establishes a permit limit for Unit 13 with compliance monitoring instructions in footnotes 1 and 2. Condition 6.7, on page 11 requires the source to perform initial performance tests to demonstrate compliance with a number of pollutants including PM/PM10 for both filterable and condensable PM emissions. The monitoring requirements specified in both conditions above require only initial testing for these limits without any form of ongoing compliance monitoring. As you may know, the recently revised 40 CFR Part 60 subpart Da, to which Unit 13 is subject, requires either a Particulate Matter Continuous Emission Monitoring System (PM CEMS) or continuous parametric monitoring for the filterable PM limit. EPA recommends that these requirements should be considered minimum requirements for compliance monitoring for the filterable PM/PM10 BACT limit. Although the new NSPS subpart Da provides alternative options for complying with PM/PM10 continuous compliance, EPA strongly recommends the use of PM CEMS. At a minimum, the permit should specify how ongoing compliance with PM/PM10 limit would be monitored. DENR must modify condition 6.1 on page 10 to require the source to perform annual stack test for condensable PM emissions to be used in conjunction with continuous filterable PM emissions monitoring to demonstrate compliance with the total PM/PM10 BACT limit.

Compliance Monitoring for Opacity, CO, SO₂, NO_x, and Hg BACT limits

Condition 8.1 on page 15 requires the source to install, calibrate, maintain, and operate Continuous Opacity Monitoring System (COMS) and SO₂, NO_x, and CO CEMS on Unit 13. However, the permit does not specify that COMS and CEMS data are used to

demonstrate compliance with opacity and associated emissions limits respectively. DENR should modify condition 8.1 to include the following “....CEMS and COMS data for these pollutants shall be used to demonstrate compliance with the limits established in this permit.”

PSD Netting Conditions 5.6, 5.8 (Pages 9 and 10 of the Permit)

These conditions state that “...reasonable shakedown period shall not exceed 180 days from initial startup of the pulverized coal fired boiler (Unit #13).” EPA believes that because the plant wide caps in these conditions are the means of establishing a federally enforceable reduction from Unit 1 in a netting activity and because Unit 13 is a new Unit, the plant wide limit should take effect immediately upon startup of Unit 13 (See 40 CFR § 52.21(b)(3)(viii)). As you are aware, we allow for a shakedown period in some cases for determining when an emission increase occurs at a facility that has undergone a modification, but this should be no longer than technically necessary. Please explain the technical basis for allowing a 180 day shakedown period for making the emission reductions from Unit 1 enforceable.

Air Quality Analysis

NAAQS compliance modeling

It is not clear from the text what averaging times were used to establish the modeled emission rates shown in Table 10-16 in the Statement of Basis. For existing point sources, compliance with short term NAAQS for PM10, SO2, and CO should be modeled using maximum actual short term emission rates, while for proposed sources, allowable short term emission rates should be used. This is discussed in EPA's Guideline on Air Quality Models (40 CFR Part 51, Appendix W), and in the draft New Source Review Workshop Manual

PSD Class II Increment Analysis

The text on page 33 of the Statement of Basis indicates that Big Stone II is the only source that needs to be reviewed for increment consumption, because the **minor source** baseline date has not been triggered for PM10 in Grant County where the proposed facility is located. However, construction of a major new source after the **major source** baseline date (January 6, 1975) may also consume PSD increment. From the information provided in the Statement of Basis it is not clear whether the PM10 emissions from Big Stone Unit I should be included in the increment modeling. For example, Table 10-16 shows 1975 as the construction date for the Babcock and Wilcox Generator. Only major sources constructed prior to January 6, 1975 would not consume PM10 increment. The State should document the construction dates for existing major sources modeled in the PM10 PSD increment modeling, and include in the increment modeling any major sources constructed after January 6, 1975. This may be a significant concern since the

modeled PSD Class II increment consumption for PM10 from the proposed facility alone is very close to the level of the 24 hour PM10 PSD Class II increment, and additional emissions may threaten the PSD increment.

As noted above existing major point sources should be modeled using maximum actual short term emission rates when determining compliance with short term PSD increments.

Endangered Species Act (ESA)

The application for Big Stone II presents a preliminary analysis of the impact on threatened and endangered species that might result from issuance of the proposed PSD permit. The application includes a proposed determination (Section 7.4, pages 7.5-7.6). While we appreciate the applicants' efforts, we do not believe it meets the Endangered Species Act (ESA) requirements. Section 7(a) (2) of Act, "requires every federal agency, in consultation with and with the assistance of the Secretary, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or results in the destruction or adverse modification of critical habitat."

In a March 17, 2006 brief submitted by EPA before the Environmental Appeals Board (EAB) in response to a petition that Illinois Environmental Protection Agency (IEPA) failed to consider ESA in issuing a permit (Indeck-Elwood, LLC, Permit No. 197035AAJ), EPA stated that the requirements of the ESA apply to the issuance of PSD permits by EPA and delegated States acting on EPA's behalf (*See attachment 1 – In re: Indeck-Elwood, LLC, Permit No. 197035AAJ, PSD Appeal No. 03-04*). The Big Stone II final permit can *not* be issued until the ESA requirements are met. We believe that ESA and PSD permitting processes can proceed concurrently and that the ESA component does not have to go through the public participation process because it is essentially an intra-governmental process.

According to the U.S. Department of Energy, Western Area Power Administration in its draft Environmental Impact Statement (DEIS) (May 2006), a Biological Assessment for the expansion of the Big Stone II Power Plant was initiated on November 11, 2005 to meet requirements of Section 7 of the Endangered Species Act (DEIS, Chapter 6; Consultation and Coordination, page 6-1). As described in the DEIS, the intention was to provide relevant biological information to the South Dakota Ecological Services Office of the U.S. Fish and Wildlife Service. We believe that it would be prudent for us and the State to consult with the Western Area Power Administration regarding its ESA efforts. If those efforts considered the potential impacts that might result from issuance of the PSD permit to Big Stone, then it is likely that no further work is needed.

The State must not Rely on EPA's Inaction as the Basis for a Determination

On Page 11 of Statement of Basis, DENR states "*On December 28, 2000, EPA submitted a section 114 to Otter Tail Power Company concerning the Big Stone I facility. DENR is not aware and has not been informed by EPA of any change at Big Stone I that would*

have required Big Stone I to obtain a PSD permit. Therefore, emissions offsets from Big Stone I are an acceptable approach."

The State proposes to draw a conclusion from EPA's inaction. It is inappropriate for the State to draw such a conclusion from EPA's inaction. The State must not rely on the lack of an EPA action or determination as the basis for proposing to allow emission offsets.